



Towards Time Consistency in Bank Regulation

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In financial crisis, regulators will fold

- Simple Idea
- More relevant than ever



Political Economy Models of Financial Regulation

- Examine regulatory design
 - Repullo 2000, Kahn-Santos 2005, Espinosa et al. 2011
- Here, lack of commitment is the focus
 - See also, eg Farhi Tirole (2012) Chari Kehoe (2015)



- Structure
- Three periods risk neutrality no discounting
- Banks have moral hazard in period 0
- Banks adjust leverage in period 1
- Returns realized in period 2



- Regulator concerns
- Bank failure (debt greater than asset value) is costly (bankruptcy costs, including e.g. disruption of contractual arrangements)
- Bailouts are costly (difference between asset value and debt value)
- (Special to banks): Bank debt is socially valuable



- The Bailout Decision
- Ex post decision in terminal period:
 - Bailout (effectively, recapitalization) if bank not *too* far under water
 - Otherwise let fail



- Leverage decision
- Anticipating bailout policy, bank adjusts leverage
 - Banks decision in corporate finance terms (modified Modigliani Miller): maximize value of bank (ie. value of expected subsidy obtained from the bailout)



- Optimal bailout policy with commitment
- If the regulator can commit in period 1 to a more stringent bailout policy, can reduce the bank's incentives to take leverage.
- If commit to no bailout, then no leverage (as long as bankruptcy causes some loss to firm's stakeholders)
- More generally, regulator wants *some* bank leverage, but restricting bailout restricts leverage.



- Optimal leverage policy
- Instead, natural to consider banking regulation to restrict leverage directly
- Conditional on the leverage policy, the optimal bailout is in general not time-consistent
 - Ex post bailout is stricter, since some liquidity benefits are bygones.



- Effects as value of interim liquidity disappears
- Optimal never to bail out a bank or to set leverage equal to zero. Either policy generates the other.



- Time consistency of leverage policy
- Leverage policy could be specified either at time 1 or at time 0
- In general this leads to a time consistency problem as well.



- Example: Bankruptcy prohibitively costly
- In this case in absence of restrictions banks are 100% debt financed.
- Regulator's interim stage trade-off:
social value of liquidity vs ex post cost of bailout



- Example (continued)
- Ex ante incentives of bank and regulator best aligned with all-equity contract.
- Thus ex ante regulator prefers lower leverage than he prefers ex post.



- Extensions
- Rebalancing leverage (no major change)
- Regulator with financial stakes
- Steady state version (same structure but better for calibration)
- Institutions can increase systemic risks
- Why not narrow banking?



- Other rescue programs
- Crucial aspect of bailout: rescue of under-collateralized, uninsured creditors, (not equity holders)
- Rescues which enhance asset quality even more damaging
- Ring fencing has only minimal effect on time consistency



- Deposit Insurance Funding
- Affects incentive of regulator as well as financial institutions
- Making funds too easily available can increase subsidy to non insured creditors, when insurer has discretion
- May want to limit amount of funds to suitable size for non-systemic institutions



- Centralized Clearing
- In wake of financial crisis, movement away from OTC arrangements for derivatives
- Centralized systems have advantages when traded asset is standardized
- Centralized systems remove incentives for monitoring creditworthiness of counterparties
- May make regulator hostage to a new too-big-to-fail entity: the new central counterparty.



Summary

- Regulators fold because of time inconsistency
- No reason to believe that can change, if institutions are sufficiently systemic
- Leverage regulation is no more immune to time inconsistency than are other policies

